Chukrasia tabularis

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Chukrasia tabularis A. Juss.

Taxonomy and nomenclature

Family: Meliaceae **Synonyms:** *Chikrassia tabularis* A. Juss, *Chukrasia tabularis* var. *velutina* (M. Roem.) W. Theob., *C. velutina* M. Roem., *Swietenia chikrassa* Roxb.

Vernacular/common names: Chittagong wood (Eng.); surian batu (Malay); boga poma, madagari, pabba, agil (Ind.); yinma (Burm.); siat-ka, yom-hin (Thai); Chittagong wood, chikrassy, yinma, yonhim (trade names).

Distribution and habitat

Widely distributed in the moist tropical forests of South and Southeast Asia where it is a dominant canopy tree. In peninsular Malaysia, it occasionally occurs as a coloniser of bare lands.

In the area of natural distribution it is found in the lowlands and up to 800 m altitude, in areas with 1400-4000 mm rainfall/year. Prefers annual rainfall of more than 2000 mm a year, although it tolerates as little as 850 mm but then growth is slow. It thrives in areas with uni- as well as bimodal rainfall regimes. Best growth when mean annual temperature is 20-25°C and absolute minimum of 5-10°C.

Outside its natural distribution it is grown in plantations in West and South Africa plus some Caribbean countries and Costa Rica.

In Vietnam the rates of timber exploitation have caused such declines in population that, at a national level, the species qualifies as critically endangered.

Uses

Mainly grown for the valuable timber that is used for furniture, flooring and interior construction. The wood has a density of 625-800 kg/m^3 at 15% mc. The grain is often interlocked.

The straight bole and its ability to self-prune make it suitable for growing in combination with crops like bananas, *Citrus* spp. and guava.

Botanical description

Evergreen or deciduous tree up to 30 m, occasionally 40 m, with a straight bole that is branchless up to 25 m. Old bark rusty brown and deeply fissured. Leaves paripinnate, 30-50 cm long, with 4-6 pairs of opposite or alternate leaflets with dentate margins. Flowers unisexual, small, white and sweet-scented, in 10-30 cm long panicles.

Fruit and seed description

Fruit: erect ovoid or ellipsoid dehiscent capsule, 2.5-5.0 cm long, with 3-5 locules. The fruit wall consists of an outer woody layer and an inner stony layer, which tend to separate from each other when the fruit splits open. The capsule contains 180-250 seeds arranged in layers on the central columella.

Seed: about 1.2 cm long, flat and with a brown membranous wing twice the length of the remaining portion of the seed. Cotyledons thin, radicle facing the wing; endosperm absent. 50,000-100,000 seeds per kg.

Flowering and fruiting habit

Monoecious species. Flowering normally begins when the tree is 8-9 years and in some places there is a masting period every 2-3 years. Within the area of natural distribution the tree is leafless from December to March. Flowering starts in April and continues until June/July and the fruits ripen in January-March. The seeds are wind dispersed.

1, Tree habit; 2, flowering twig; 3, sectioned flower; 4, dehisced fruit; 5, seed. From: Plant Resources of South-East Asia No 5:2.

Harvest

The fruits are harvested from the tree when splitting lines are visible on the fruit, or when the first fruits begin to open.

An adult tree with a good crown can produce 8-16 kg fruits or 1-2 kg of seeds.

Processing and handling

After collection the capsules are dried until they split open and the seeds are released by gentle tumbling or shaking, while care is taken to protect the winged seeds from being blown away. It has been recommended to dry the fruit in the shade as sun drying may cause overheating and desiccation of the sensitive seeds.

Storage and viability

The seeds have been termed recalcitrant but most reports say they are orthodox and tolerate drying to 7-8% moisture content. At this mc they can be stored in closed containers at room temperature for one year with a loss of 35-50% in viability. If stored at 5-10°C they will store for several years without loss in viability.

Dormancy and pretreatment

The seeds are not dormant and need no pretreatment but soaking for 8 hours before sowing improves germination.

Sowing and germination

Seeds are sown in the shade in porous soil. The best result is obtained when the seeds are sown in germination trays and pricked out into polytubes. Germination normally starts after 7 days and ends after 28 days. Germination is epigeal. The seedlings are very sensitive to drought.

After 6 months the seedlings are ready for planting. This is done during the first rains or during the early part of the second rains.

The species is normally propagated by seeds but vegetative propagation from root and stem cuttings is also possible. Stem cuttings from juvenile material (4-5-year-old trees) give the best result.

Direct sowing has been done with success.

Selected readings

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Tree habit. Photo by M.A. Sattar and M.K. Alam

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